REMARKS

All of the examined claims have been cancelled, and a new set of claims have been presented. The cancellation of claims 1-33 is without prejudice to the applicant's rights to file one or more continuing applications directed thereto.

New claims 34-59 are limited to component A being) 4-[2-methyl-3-(4,5-dihydroisoxazol-3-yl)-4-methylsulfonyl-benzoyl]-1-methyl-5-hydroxy-1H-pyrazole or one of its environmentally compatible salts, which is the applicant's commercial product topramezone.

The only issue in the outstanding office action is the rejection of claims 1-33 under 35 USC 103(a) as unpatentable over the combination of Sievernich et al and Baltruschat et al.

The Sievernich Canadian reference corresponds to WO 99/65314 and U.S. Patent 6,534,444. Sievernich generically teaches synergistic herbicidal mixtures comprising

A) at least one 3-heterocyclyl-substituted benzoyl derivative of the formula I; and

B) a synergistically effective amount of at least one herbicidal compound from the group comprising certain herbicide classes.

Sievernich et al. teach as preferred component A) on page 24, lines 42 to 44 of W099165314, 4-[2-methyl-3-(4,5-dihydroisoxazol-3-yl)-4-methylsulfonyl- benzoyl]-1-methyl-5-hydroxy-1 H-pyrazole (Ia.33), which compound is Ia.33 in Sievernich et al. and Ia.29 in the present application. With the restriction to the specific compounds of

components A and B in the present claims, it is believed clear that the claims are directed to synergistic combinations of herbicides, as will be explained in more detail hereinafter.

Sievernich do not teach foramsulfuron as component B for a synergistic mixture with component A topramezone.

There is no hint or indication in Sievernich et al. that would motivate the man skilled in the art to use the synergistic mixture of the present cliams. Instead he would rely on the many mixtures explicitly disclosed in Sievemich et al. as the effect of randomly mixing herbicides according to the generic disclosure cannot be foreseen. In particular, a synergistic effect cannot be predicted from the herbicidal activity of individual components as adverse effects may arise.

The Examiner seems to have overlooked the fact that subject matter of the pending claims is not merely effective but synergistic herbicidal mixture. Support for this synergism is provided by the respective experimental data. The Colby-value, which stands for the calculated additive effect [%], has to be compared to the observed effect (damage [%]). The data prove that the inventive mixtures result in a more than simply additive effect. As this is not evolvable, the results are surprising and thus non-obvious in view of the prior art. The man skilled in the art would not have guessed or known which of the innumerable potential combinations from a generic disclosure or other prior art would show synergistic activity and not merely additive or even detrimental effects.

Baltruschat generically discloses certain synergistic herbicidal mixtures comprising

A) at least one 2-phenyl-4-(hetero-)aryloxypyrimidine of formula I; and

B) at least one additional herbicidal compound, which is active against broad-l eaved weeds and/or annual grasses; and/or

C) at least one additional safening compound.

Baltruschat et al. teach foramsulfuron as potential component B) for synergistic mixtures with 2-phenyl-4 (hetero-)aryloxypyrimidines.

The binary synergistic herbicidal mixture of the present claims, comprising 4-[2-methyl-3-(4,5-dihydroisoxazol-3-yl)-4-methylsulfonyl- benzoyl]-1-methyl-5-hydroxy-1 H-pyrazole and foramsulfuron, is not disclosed or suggested in Baltruschat et al.

Thus, as none of the prior art references discloses the claimed mixture, the subject matter of the present application is novel over Sievernich et al. and Baltruschat et al..

Apart from the technical field, weed control, there is no common feature in the cited prior art which would allow one to understand the Examiner's reasoning for joining the two teachings in order to establish obviousness of the present claims.

The argumentation in the Office Action is also not consistent. On one hand, the Examiner does not consider tables 5 to 15 of the present application to evaluate synergism, as the addition of components C) and D) is optional only. On the other hand,

the Examiner tries to connect Baltruschat et al. with the present invention based on the safening component, which is optional in each case (and absent in Sievernich et al.).

Next, the Examiner claims (Miscellaneous Remarks) that a single species (cpd. Ia.29) cannot show purported unexpectedness (synergism) of an entire genus. Then, the idea to combine unrelated herbicides (page 10 of the Office Action) allegedly flows logically from their having been individually taught, thereby expecting optimum control or growth regulation.

Be that as it may, the man skilled in the art is well aware of the fact that the individual properties of active herbicidial ingredients will not simply add up; incompatibility (e.g. physico-chemical) can be expected, compensation or antagonism and other interactions may occur. Consequently, the man skilled in the art actually would not at random combine any herbicides known from the prior art and expect reasonable activity, let alone a synergistic effect.

Sievernich et al. teach that compounds of formula I can advantageously be mixed with certain other herbicidal compounds. Exemplary, synergistic activity is proven for a number of binary mixtures of compounds of formula 1 with herbicides selected from the groups BI to B16, however foramsulfuron is not even mentioned.

Baltruschat et at. teach that 2-phenyl-4-(hetero)aryloxypyrimidines can advantageously be mixed with certain other herbicidal compounds and/or safeners. Inter alia, foramsulfuron is mentioned as potential mixing partner in a list of more than 100 other herbicides. There is no indication that foramsulfuron is particularly suitable for

mixing with 2-phenyl-4-(hetero-)aryloxypyrimidines. Component A) of the present invention is not even disclosed in Baltruschat et al.

Based on the disclosures of Sievernich et at. and Baltruschat et al., the man skilled in the art would not even consider to combine herbicides according to the present cliams, as there was no hint or indication as to select the inventive claimed component A) from the teaching of Sievernich et al. and to select the inventive claimed component B) from the wide range of potential mixing partners as disclosed in Baltruschat et al. for a different class of herbicidal compounds.

In fact, these documents teach away from the present invention, as although Sievernich et al. disclose a wide selection of mixing partners, foramsulfuron is not mentioned. The only conclusion for a man skilled in the art would be that foramsulfuron in fact is not suitable for mixture with components A) according to Sievernich et al..

Thus, the man skilled in the art looking for binary synergistic mixtures other than those exemplified in the Sievernich et al reference at most would consider binary mixtures based on the generic disclosure of Sievernich et al. Due to the complex interactions of different active ingredients, there is no reason for the man skilled in the art, having a wide selection of synergistically effective binary mixtures at his disposal, to take a risk with random mixtures from unrelated references.

The data reported in the present specification starting at page 44 clearly establishes that the claimed combination of herbicides results in a synergistic effect. It will be noted that in each instance the measured damage to undesirable plants using the

claimed combination is higher than the calculated Colby Value E, both with the two compounds A) and B) used alone and with the two compounds A) and B) used with optional ingredients.

Regarding the relation between application rate and synergism as mentioned by the Examiner, these two parameters do not necessarily depend on each other. Normally, the application rate of a herbicide correlates with the damage observed in the undesired vegetation. As herbicides interfere with essential metabolic pathways, a higher damage can be expected with higher application rates, unless e.g. salvage pathways or other defensive mechanisms exist.

The concentration [g/l] of the herbicide applied is not relevant as the application rate [g/ha] in the field also depends on the e.g. spray volume [l]. Thus, the only meaningful parameter for assessing the herbicidal activity is the application rate.

Usually, a synergistic effect cannot be predicted from the herbicidal activity of the individual components as adverse effects may arise.

The present invention provides a herbicidal mixture, a combination of at least two defined active ingredients, which provides control over unwanted weeds with an efficacy that significantly outperforms the efficacy that could have been expected from adding up the efficacy of the individual components. A restriction to certain application rates or mixing ratios thus would unduly limit the inventive concept.

As shown in examples 3 to 15 of the present application, mixtures comprising components A), B) and/or C) and/or D) demonstrate a significant synergistic effect. A

man skilled in the art is able to determine the required amount of each herbicide to address the specific problem in the field. By providing examples for the inventive mixtures demonstrating substantial increase in activity over the additive effects at different application rates, with different mixing ratios and for a wide variety of important weeds, the invention is supported in a way that a man skilled in the art can readily work the invention.

Early and favorable reexamination of this application is awaited.

Should the Examiner have any questions on the above or the new claims, a telephone call to the undersigned is suggested.

If any additional payment is required, please charge the cost thereof to deposit account no. 02-2135.

Respectfully submitted,

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